

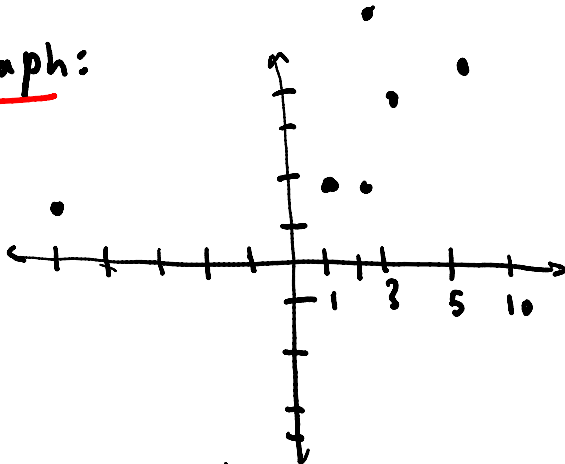
Functions and Relations

20 April 2010
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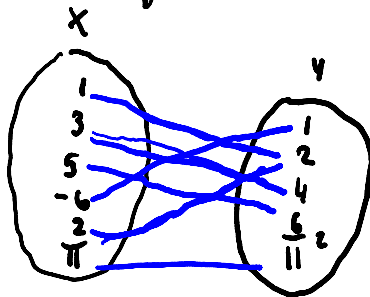
Relation - a set of order pairs

list:
finite Relation → Ex $\{(1,2), (3,4), (5,6), (2,2), (\pi, \pi^2)\}$

graph:



mapping:
graph



each line represents one
ordered pair
↑ ↑

infinite

equation: There is no relation for every equation. Heres an example of one that works.

Ex $y=2x$ →

x	y
3	6
4	8
5	10
3	6
pi	2pi
10	20

Anything you can draw on a graph is a relation

Function: a relation with one very important characteristic

Every input (x) can have only one output

Ex

x	y
4	2
5	2
6	3

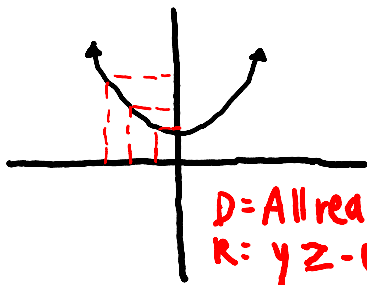
FUNCTION

x	y
4	2
4	3
4	4

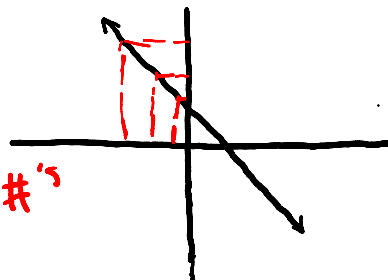
NOT A FUNCTION

x	y
1	4
2	3
3	2
1	2
2	3
3	4

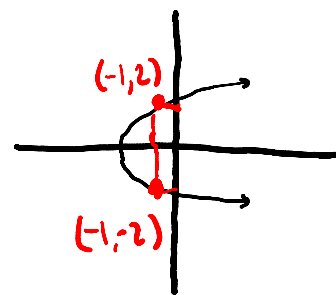
NOT A FUNCTION



Function



Function



Technique ★

- vertical line test
- run a ruler vertically over graph
- if you pass over two points at any time it is not a function

x: Domain: input

y: Range: output

x	y
4	2
5	2
6	3

Finding domain on a graph.

take a pencil and scan right and left. what x values have points?

The x-values with points are in the domain.

finding range: Scan up + down looking at y-values.